Egyptian Pioneer Schools Languages

2018 /2019



Primary 5

Science Booklet

First Term

- Student Name: ______________________

- Class : ______________________





Unit 1

Lesson 1

Light

Light

Is the form of energy that can be seen and causes vision.

- Light is necessary for photosynthesis process lighting of houses.
- Light is the most important energy on earth.

The visible spectrum

It is an energy form which can be seen.

Sources of light

There are two types of light sources which are:

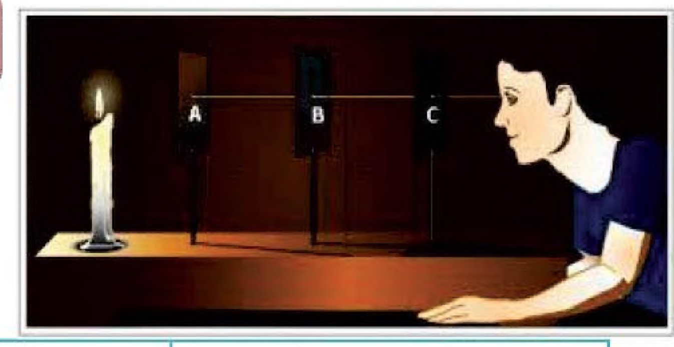
- natural sources such as: (the sun – stars)
- The sun is the main source of light on earth.
- artificial (man – made) sources such as: (electric lamps – torch – candles)
- The moon is not considered source of light.
- Moon light is the reflection of the sun light that falls on its surface.

Properties of light





1-Light travels in straight lines



Activity (1):

Steps	Observation	Conclusion
1. Put three carton partitions on straight line in front of light of candle. 2. Look at the candle light through the hole of partition ©. 3. Move partition (b) to the right or the left.	We can see the candle's light. You cannot see the candle light.	Light travels in straight lines.

As a result of traveling light in straight lines so some phenomena happen which are:

a. **The formation of images by using narrow holes.**
b. **The formation of shadow.**



a.The formation of images by using narrow holes.

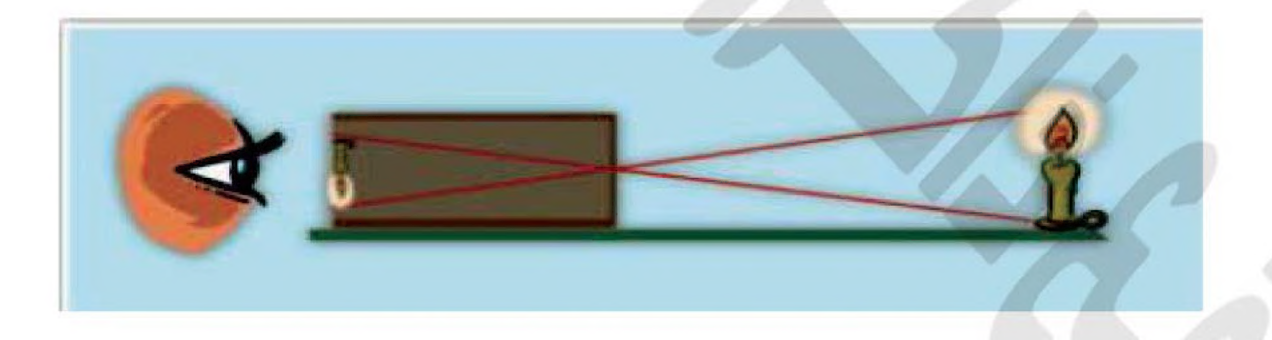
The idea of photographic camera

Activity (2):

The idea of photographic camera:



Steps	*Observation*	*Conclusion*
1. Place a lightened candle in front of a box containing a hole. 2. Look at the other side of the box which contains a transparent paper.	A minimized& inverted image of the candle is formed.	Light travels in straight lines.





b.The formation of shadow.

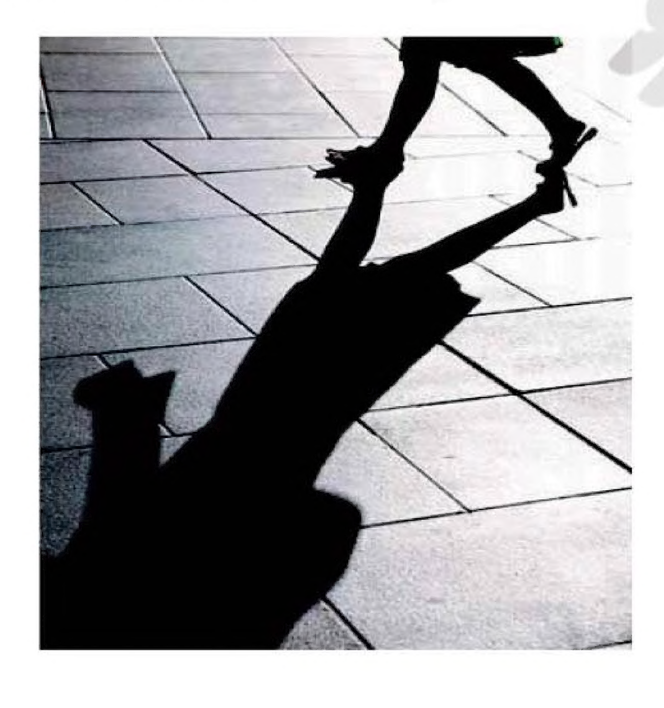
Shadow

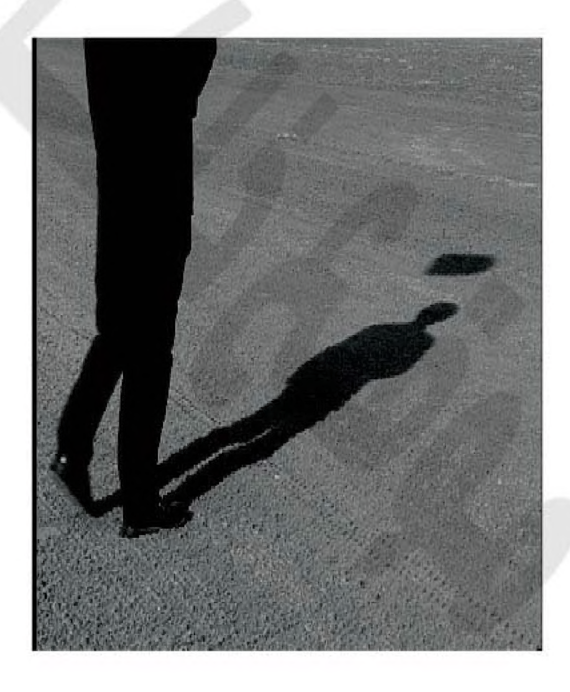
It is the darkened area which is formed as a result of light falling on an opaque object.

Activity:

Steps	*Observation*	*Conclusion*
1. Place your hand between a light source& the wall.	A shadow is formed.	Light travels in straight lines.

The *nearer the object* to the light source is *the bigger the object* shadow becomes.





2- Light transmits in different materials

Materials according to their ability to transmit light

- Transparent materials allow most light to travel through and things can be clearly seen behind
  EX:- (Air - Water - Glass)
- Semi transparent materials allow some light to travel through and things can be less clearly seen behind
  EX:- (tissue peper - screen door)
- Opaque materials donot allow light to travel through & things behind canot be seen
  EX:- (carton peper - wood - human body)

3- Light reflection

It is the bouncing (returning back) of light rays when they fall on a reflecting surface.

Activity (1):

Steps	Observation	Conclusion
Stand facing a plane& smooth mirror.	You can see your image. Light reflects (Regular reflection).	When light falls on the mirror it will be reflected back. This reflection is known as (regular reflection)



Activity (2):

Steps	Observation	Conclusion
Stand facing a piece of white paper.	You can't see your image. Light reflects and scatters (Irregular reflection).	When light falls on the paper's surface, it reflects& scatters light in different directions This reflection is known as (Irregular reflection)

4- Light refraction

It is the change in the direction of light when they pass through the separating surface between two different transparent media.

- **The pencil appears broken when it is put in a glass of water due to light refraction between air and water.**



Give reasons for:

1)-The bottom of the swimming pool appears in a higher position than its real one.

OR The fish under water appears nearer than its normal position.

Due to the light refraction

5- Light separation

It is the separation of white light into seven spectrum colors.

Activity

Steps	Observation	Conclusion
Hold a prism & let the sunlight shine through it on a white paper.	The visible white light can be separated into seven colors: (Red- Orange – Yellow – Green – Blue –Indigo – Violet)	The visible spectrum is made up of seven colors Called (spectrum colors) White light / Dispersed light / Prism

Q



Give reasons:

We can see the rainbow after a shower of rainfall.

Because sunlight passes through water droplets during rain falling & separates into seven spectrum colors.

Class Work Sheet

Complete:-

1) The main source of light on earth is..............................
2) Light travels in …………lines.
3) Is a dark area which is formed when light falls on an opaque objects.
4) Light is a form of……………
5) ………….. Is the light energy that can be seen.
6) Formation of …………through narrow holes and formation of …………. are form the applications of traveling light in straight lines.
7) The material which allows most light to transmit through is called…………….
8) Light can easily transmit through …………and ………
9) The material which we can see an object clearly behind it is called …………………..
10) The clear glass in a window is an example of ………materials.

Give Reasons:-

1) Formation of inverted image through narrow holes

....

2) Moon is considered as a source of light

....

3) The pencil is seen broken in water glass.

....

4) Formation of shadow.



……………………………………………………………………………………

5) Glass is a transparent material.

……………………………………………………………………………………

6) The formation of the spectrum color.

……………………………………………………………………………………

Write the Scientific term:-

1) A dark area formed by an opaque body that block the light.

……………………………………………………………………………

2) It is the change in the direction of light when they pass through the separating surface between two different transparent media.

……………………………………………………………………………

3) It is the bouncing (returning back) of light rays when they fall on a reflecting surface.

……………………………………………………………………………..

4) Materials don't allow light to travel through & things behind cannot be seen.

…………………………………………………………………………...

5) It is the separation of white light into seven spectrum colors.

…………………………………………………………………………...



Home Work Sheet

What happens when:-

1) Light passes in glass prism.

………………………………………………………………………………………

2) You stand in front of plane mirror.

………………………………………………………………………………………

3) Light falls on opaque object.

………………………………………………………………………………………

4) Light Travels to a new medium.

………………………………………………………………………………………

Put (√) or (×) and correct the wrong answer:-

1) When light reflects from plane mirror is regular reflection while reflection from paper is called irregular reflection. (…..)
2) The pencil in water glass is seen broken due to light reflection. (…..)
3) The light spectrum contains three colors. (…..)
4) The spectrum colors appear due to light refraction. (…..)
5) Glass is a transparent Material, while carton is a translucent Material, and tissue paper is an Opaque Material. (…..)
6) Shadow is formed when an opaque body blocks the light. (…..)



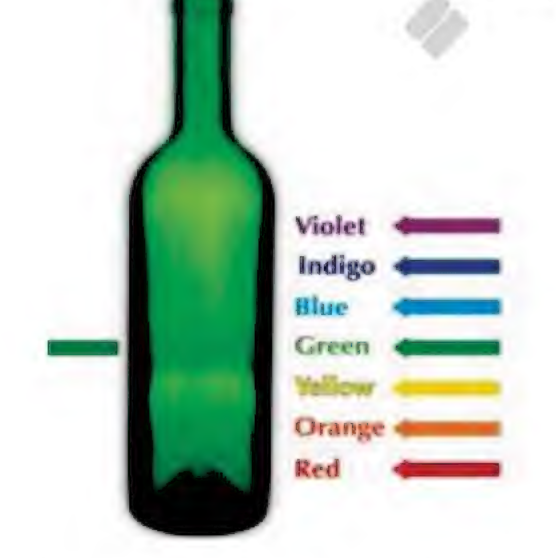
Unit 1

Lesson 2

Seeing colored objects

The white visible light can be separated by a prism *into 7colors* because the white light is composed of the 7spectrum colors.

Activity 1

SEEING COLORED OBJECTS	
SEEING COLORED TRANSPARENT AND TRANSLUCENT OBJECTS	SEEING COLORED OPAQUE OBJECTS
When white light strikes the transparent glass bottle as shown, the glass bottle absorbs all the spectrum colors and allows the green light only to transmit through.	When white light strikes the banana (opaque object) as shown, the banana absorbs all the spectrum colors and reflects the yellow light only.
	
So the glass bottle appears to be green	So the banana appears to be yellow



Activity 2

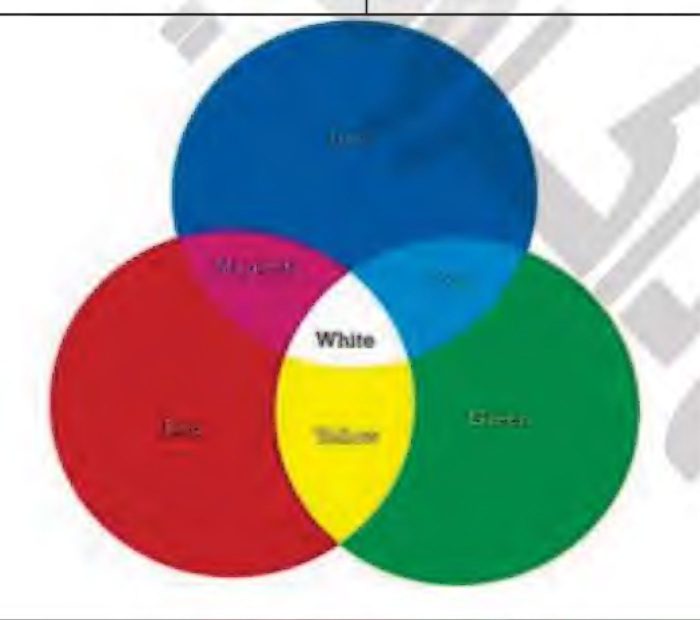
SEEING WHITE AND BLACK OPAQUE OBJECTS	
SEEING WHITE OPAQUE OBJECTS	SEEING BLACK OPAQUE OBJECTS
When white light strikes white opaque objects. Objects reflect all the spectrum colors. **So we should wear white clothes in summer.**	When white light strikes black opaque objects. Objects absorb all the spectrum colors and do not reflect any color. **So we should wear black clothes in winter.**

Activity 3

WATCHING COLOURED OBJECT THROUGH A TRANSPARENT COLOURED OBJECT		
Steps	**Observation**	**conclusion**
1- Look at the red apple through the red transparent glass sheet. 2- Repeat the previous steps using the green or blue transparent glass sheet.	1- The red apple appears red. 2- The red apple appears with no color and seems to be black.	1- Apple absorbs all spectrum colors and reflects the red color that transmits through the red transparent glass sheet. 2- The reflected red color from the apple is absorbed by the green glass sheet.

Activity 4

MIXING THE COLORED LIGHTS	
PRIMARY LIGHT COLORS	**SECONDARY LIGHT COLORS**
They are light colors that are not produced by mixing two other light colors. EX. (red – green – blue) - white formed by mixing (Red + green + blue)	They are light colors which are produced by mixing two primary light colors. EX. (yellow – magenta – cyan) - Yellow formed by mixing (red + green). - magenta formed by mixing (red + blue) - cyan formed by mixing (blue + green)



Class Work Sheet

Complete:-

1. The opaque objects .... all colors.
2. The .... consists of seven colors.
3. On mixing red + green it produces .... color.
4. On Mixing primary colors .... is produced.
5. On Mixing red + blue it produces .... color.
6. The white object .... all colors.

Give Reasons:-

1. We can see colored objects.

....

2. The banana appears to be yellow.

....

3. Formation of Rainbow.

....

4. The blackboard appears black.

....



Home Work Sheet

Write the Scientific term:-

1-Seven colors forms the white color

....

2. Blue - red - green.

....

3. Colors formed in the sky after rain.

....

4. Colors formed from mixing two primary colors.

....

What happens if:-

1. White light falls on a black object.

....

2. White light falls on green object.

....

3. Seeing a red apple from green sheet.

....

4. Mixing primary colors.

....

Unit 1

The Magnet

Lesson 3

Magnet It is a type of rock has natural force to attract the materials made of iron.

Story of the Magnet

- 2000 years ago, Ancient Greeks found a type of rocks in the area of *magnesia.*
- The rock has a *natural force* to attract the materials made of iron.

This black rock is called *natural magnet.*





Types of magnet

Natural Magnet	Artificial (man-made)Magnet
It's a black rock known as magnetite	It's a magnet made by man
	Bar Horse-shoe Round Magnetic needle

Classification of materials

Materials can be classified according to the attraction to the magnet into:

Magnetic materials	*Non- magnetic materials*
The materials that are attracted to the magnet.	The materials that are not attracted to the magnet.
Examples: Iron nails - Paper clips - pins.	*Examples:* Glass - wood - aluminum



Properties of magnet

1)-The magnet has two poles.

2)-The freely suspended magnet always take one direction.

3)-Like poles repel each other and dislike poles attract each other.

1)-The magnet has two poles

Magnetic poles

They are the area of the magnet which attracts a greater number of paper clips.

South Pole → ← North Pole

Experiment

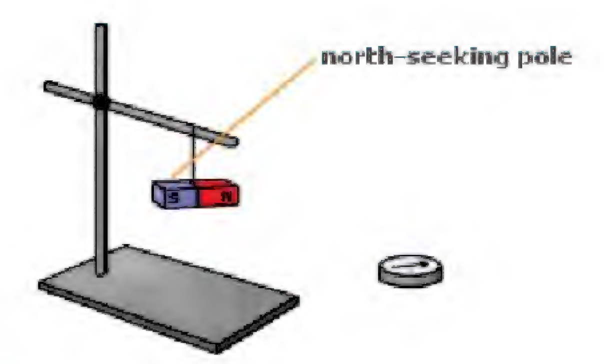
Steps	Observation	Conclusion
Approach some paper clips to a bar magnet.	The two ends of the magnet attract a greater number of paper clips.	Every magnet has two poles.

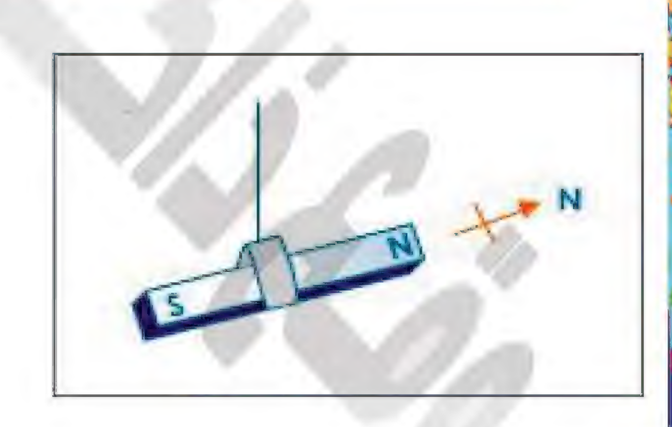


2)-The freely suspended magnet always take one direction

Experiment

Steps	*Observation*	*Conclusion*
Hold a magnet at its center by a fine string fixed in the stand, leave the magnet until it gets horizontally stabilized and try to move it several times.	The magnet moves again to one direction.	The freely suspended magnet takes one direction and always this direction is the North direction.





N.B

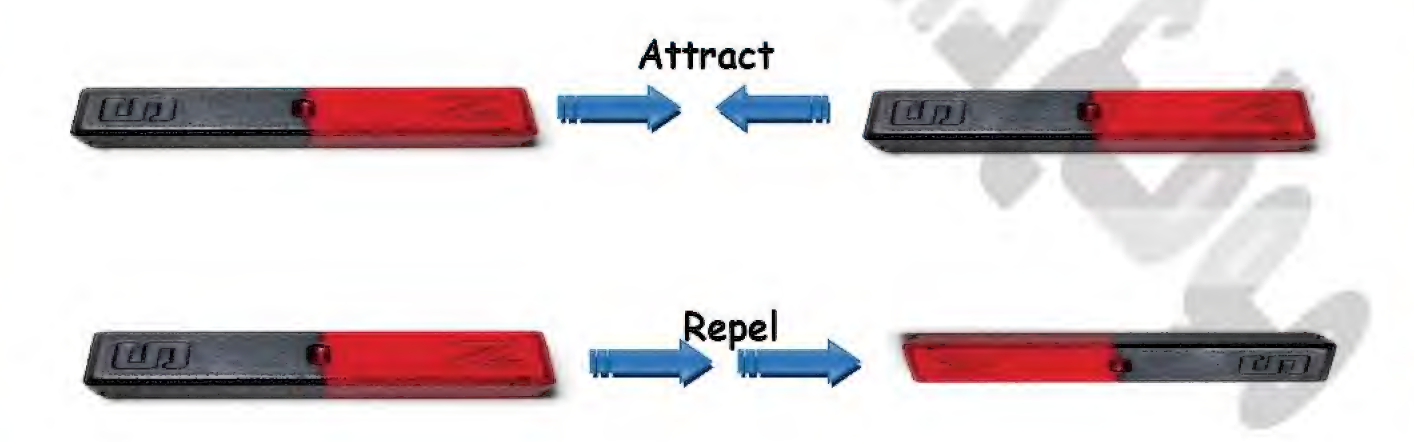
- The North Pole of the magnet refers to the North direction.
- The South Pole of the magnet refers to the South direction.



3)-Like poles repel each other and dislike poles attract each other

Experiment

Steps	Observation	Conclusion
1. Hang one magnet and make it move freely. 2. Approach the north pole of a magnet to the north pole of the hung one. 3. Approach the north pole of a magnet to the South pole of the hung one.	The two like poles repel each other. The two dislike poles attract each other.	The like magnetic poles repel each other. The dislike magnetic poles attract each other.





Magnetic field

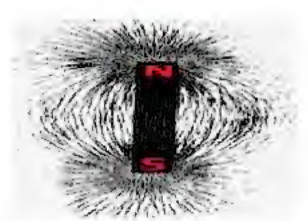


It is the space around the magnet in which the effect of magnetic force appears.

Magnetic force

It is the magnet ability to attract the magnetic materials.

(The magnetic force is an invisible force)



Uses of magnet

Compass

Structure

A magnetized needle which is:

1. A light and small magnet that can spin freely.
2. Its north pole points to the north geographical direction.



Uses

Identify the four geographical directions.





Class Work Sheet

Complete:-

1. The Natural magnet is................ Stone named................
2. The magnet takes many shapes as .... and............
3. From magnetic substance is .... while .... is from non-magnetic substances.
4. The area around magnet in which its ability appears is called...............
5. The magnet has .... poles.
6. Like poles .... while unlike poles.....................
7. We can determine geographic directions by....................

Give Reasons:-

1. Using magnetic needle in compass.

....

2. Iron is magnetic substance.

....

3. Glass is Non-magnetic substance.

....



Home Work Sheet

Complete:-

1-The greatest magnetic force is concentrated at …………... of magnet.

2. From magnetic substance is .... while .... is from non-magnetic substances.

3……………...are the materials which are attracted to the magnet.

4…………...are the materials which are not attracted to the magnet.

5. The magnet's pole that always refers to the north direction is called……….

Write the scientific term:-

1. The strongest area in magnet at two ends.

....

2. The ability of magnet to attract things made of iron.

....

3. One of iron ore named magnetite.

....

4. Instrument used to determine geographic directions.

....



Unit 1

Magnetism & electricity

Lesson 4

Relation between the magnet and the electricity

The electricity has a magnetic effect

Experiment

Steps	Observation	Conclusion
Put a compass beside electric circuit and switch on it. battery, W, E, S, open switch, jittery compass needle, closed switch, current	The compass needle will move suddenly.	The electricity has a magnetic effect.



By using electricity can make artificial magnet

Experiment

Steps	*Observation*	*Conclusion*
Bring 30Cm insulated copper wire, then spring it around a wrought iron bar then connect the wire with a battery and approach it to iron clips.	The paper clips attracted to the iron nail.	The iron nail becomes an (Electromagnet)



When the electric current passes through a twisted wire in the form of a coil around a wrought iron bar, the wrought iron bar becomes a magnet and it is known as *(Electromagnet).*

Electromagnet

When an electric current passes through a twisted wire (coil) around a wrought iron bar the iron bar becomes a magnet.

N.B

The magnetic force of the electromagnet increases by increasing:

1. The number of coils turns.

2. The intensity of electric current passing through the coil by using two batteries.

Uses of electromagnet

1. in many devices such as:

Electric bell – Electric mixer --- Television --- The disc drive

2. in Factories:

The electromagnet attracts iron pieces, by cutting the current, it loses its magnetic force& iron pieces fall. (Winches)


Elliptical Electro Magnet

Generating electric current from magnet

The scientist faraday discovered that on moving a wire between two poles of magnet an electric current is produced in the wire.

Faraday uses this discovery to make electric generator (DYNAMO).

Dynamo

A device that changes ***the Kinetic energy*** into ***electric energy.***

Examples

Small dynamo in bicycle:

It consists of:

1. A small cylinder which touches the wheel tire.
2. The cylinder is connected with a U- shaped magnet which is surrounded by a coil.

How does it work?

1. When the bicycle moves, the small cylinder turns so the magnet turns.
2. Then an electric current is generated in the coil.



Huge dynamo

It consists of:

Many coils which turn between two poles of a huge magnet.

Uses:

Generate electricity for lightning cities& factories.





Class Work Sheet

Choose:-

1- The dynamo generates ………….. energy from mechanical energy.

a. thermal b. electrical c. light d. magnetic

2- The electric current can be generated in a coil of dynamo by

a.moving the coil between the two poles of a magnet.

b. moving a magnet inside the coil.

c. (a) and (b).

d. moving the coil and the magnet around each other.

3- To increase the amount of electricity that is produced from the dynamo, we must …………

a. use a strong magnet.

b. increase the number of turns in the moving coils.

c. decrease the number of turns in the coils.

d. (a) and (b).

4- The coil of dynamo is made up of ………………..

a- carbon b- copper c- plastic d- graphite

5- The dynamo is fixed in the bicycle touching the bicycle's

a- seat b- pedal c- tire d- gear



Home Work Sheet

Complete:-

1. The electric generator changes .... energy to .... energy.
2. Power stations depend on .... to generate electricity.
3. The electric current has .... effect on passing in wires.
4. Electromagnet can be used in......... .
5. The scientist .... discovered the idea of electric generator.
6. The best iron used in electromagnet is .... iron.
7. The Dynamo in bicycle uses .... magnet.
8. The electric current produced by the electric generator (dynamo) increases by ……………… or ……………………………
9. The magnetic force of the electromagnet can be increased by increasing the number of …………. and …………
10. The produced amount of electricity from the dynamo can be increased by ………….and ……………………………………..

11- When an electric current flows through a wire twisted (winding) around a wrought Irion nail, the nail becomes an ……………………………..

12- The electro magnet consists of ……………… and …………………

13 – A set is used to change the mechanical energy into electrical energy is called ……………..



Unit 2

Mixtures

Lesson 1

We can organize substance into two basic groups:

1)-Pure substances: are made only of one type of particles.

2)-Mixtures: are made of more than one type of particles.

Example:

- ***Air*** is a mixture of gases such as oxygen, nitrogen, carbon dioxide& water vapor (pure substances).
- ***Mineral water*** is a mixture of minerals such as calcium, magnesium& water (pure substances).

How can matter be mixed?

1. Shaking.



2. Grinding.



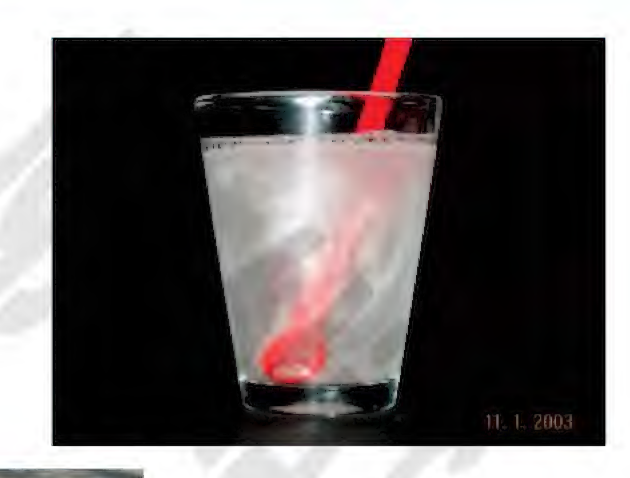
3. Stirring.



Types of mixtures

Solid- solid materials	Solid- liquid materials	Liquid- liquid materials
Salt& pepper can be mixed by shaking or grinding.	Salt& water can be mixed by shaking or stirring.	Banana& strawberry can be mixed by shaking or stirring.









How can mixture be separated?

1. Magnetic attraction.
2. Filtration.
2. Evaporation.
4. Using the separating funnel.

Examples

1. *How can you separate a mixture of sand& iron fillings?*

By using magnetic attraction.

2. *How can you separate a mixture of sand, salt& water?*

a)-By stirring → (the salt dissolves in water)

b)-By filtration → (to separate the sand)

c)-By evaporation of water → (the salt remains)

3. *How can you separate a mixture of water& oil?*

By using the separating funnel tap to separate the heterogonous solution.



Class Work Sheet

Complete the following:-

1- Sugar and water can be mixed by ………..or ………… while Sand and salt can be mixed by ………….or…………….

2- Matter can be divided into pure .... or...............

3- Mixtures can be ....,………….. or.................

3- Mixture of sand and iron can be separated by.................

4- Mixture of water and oil can be separated by.................

5- From Gaseous mixture is......................

6- …………….is the substance that is made of only one type of identical particles.

Give reasons for:-

1- Air is a mixture.

……………………………………………………………………………

2- Mineral water is a mixture.

……………………………………………………………………………

3- Both sugar and distilled water are considered pure substances.

……………………………………………………………………………

4- A mixture of sand and iron filings can be separated easily.

……………………………………………………………………………



Home Work Sheet

Put (√) or (x)

1- Vegetable salad is considered a mixture. (   )

2- Separating funnel is used in separating hetero generous liquid mixture. (   )

3- Solubility, filtration and evaporation are ways of separating mixtures. (   )

4- We use filtration process to separate mixtures which can precipitate. (   )

5- We use evaporation process to separate crushed coffee from water. (   )

What happens when:

1- Shaking or stirring some sugar with water.

……………………………………………………………………………

2- Heating salty water for a long time.

……………………………………………………………………………

3- Leaving an amount of sea water exposed to sun light for days.

……………………………………………………………………………

5- Mixing different types of juices together.

……………………………………………………………………………



Unit 2

Lesson 2

Solutions

Solubility process

It is the process which is responsible for making solutions.

Solubility process consists of:

1)-Solvent.

2)-Solute.

Solubility process

Solute + Solvent → Solution

The solvent

It is the substance in which the solute dissolves such as water.

The solute

It is the substance which dissolves in a solvent such as salt& sugar.

Solution

It is a mixture in which the solute breaks down & spread through the solvent.

The solution is made when two or more substances combine to form a mixture.

N.B

- If solute particles dissolve in a solvent, we say that it is *soluble (homogeneous mixture)* such as salty or sugary solution.
- If solute particles do not dissolve in a solvent, we say that it is *insoluble (heterogeneous mixture)* such as natural orange juice or mud in water.
- If some of solute particles do not dissolve and be suspended through a solvent, we say that it is *a suspended solution*.

Factors affecting the solubility process

1)-The quantity of solvent& solute.

2)-Temperature.

3)-Stirring.

4)-The kind of the solute.



1. The quantity of solvent& solute

Experiment 1

Steps	Observation	Conclusion
1. Dissolve an amount of sugar in 50ml water& Equal amount of sugar in 300ml water. 2. Record the time of solubility process.	The sugar in 300ml water dissolves faster.	The dissolving time increases when the quantity of solvent increases.

2. The temperature

Experiment 2

Steps	Observation	Conclusion
1. Dissolve two equal amounts of sugar in the same amount of water. 2. Heat one of them& leave the other without heating. 3. Record the time of solubility process.	The heated solution dissolves faster.	The solubility process increases when the temperature increases.



3. The kind of solute

Experiment 3

Activity	*Observation*	*Conclusion*
1. Put an amount of sodium chloride [table salt] in water& put the same amount of sodium carbonate in water. 2. Heat both gently with stirring.	The time needed to dissolve sodium chloride differs from that needed to dissolve sodium carbonate.	The solubility process depends on the kind of matter.

4. The stirring

The solubility process increases by stirring.

N.B

- *Water* is called a common solvent as thousands of substances dissolve in water (salt dissolves in water to form salty solution, sugar dissolves in water to form sugary solution).
- Although some substances don't dissolve in water.



Class Work Sheet

Complete the following:-

1. The solution is a type of ……………
2. ………. is a homogeneous liquid mixture.
3. ………….. is a type of mixtures that its components can't is distinguished.
4. ……………. and ……………. are homogeneous liquid mixtures.
5. The substance that dissolves in a liquid is called ……………….
6. The substance in which the solute dissolves is called……………
7. …………. is considered a general solvent, because its ability to dissolve most material.
8. Increasing the quantity of solvent ………… the solubility time in a certain amount of solute.

Write scientific term:-

1. A mixture consists of solute and solvent.

……………………………………………………………………………………

2. The common solvent.

……………………………………………………………………………………

3. Formation of solution.

……………………………………………………………………………………

4. Substances that can dissolve in water.

……………………………………………………………………………………



Home Work Sheet

Choose:-

1. ………… Results from the solubility of a solute in a solvent.

a- Mixtures c- stirring b- Liquid d- solution

2. To form salty solution, we add salt to water with ……………

a- melting c- evaporation

b- stirring d -grinding

3. The solvent in chocolate - milk solution is ………………

a- milk c- chocolate

b- Water d- no thing

4. Most mixtures formed by dissolving in liquids are ……….. mixtures

a. homogeneous c. heterogeneous

b. identical d. (b) and (c)

5- Substance in which solids dissolve is called………………

a. solvent c. sugar

b. solute d. juice



Unit 3

Lesson 1

Food relationships among living organisms

As we know before that the living organisms divide into:

1)- Green plants.

2)- Animals.

Green plants

Can make their own food from sunlight as a source of energy by photosynthesis process.

Animals

Depend on plants to feed & to get energy in a direct or an indirect way.

Food relationships among living organisms:

There are many ways to get food between living organisms and these are called relationships.

Types of relationships

1. Predation
2. Symbiosis
3. Saprophytism



1. Predation

Is a food relationship among living organisms in which one living organism devours (kills) another one.

Predation consists of:

1)-Predator: It is the animal which devours other animals.

2)-Prey: It is the devoured animal.

Example Lion and Deer

Predator   Prey

Predation in plants

Although some plants perform the process of photosynthesis to make carbohydrates substance, they cannot absorb other compounds from the soil to make their protein.

So, they have to prey some other tiny animals such as insects to get the elements to form proteins, they are known as insect eaters (Insectivorous plants) Such as *(Drosera and Hyacinth plants).*

In this case

Insectivorous plants → Predators

Insects → Preys



How can animals protect themselves from predation

Many living organisms use different ways to defend themselves against their enemies such as:

A. Camouflage.

B. Mimicry.

A. Camouflage

It is a phenomena in which a living organism can change its color to stimulate the colors of the environment where it lives.

Examples

Fish - Chameleon - Butter flies - Birds -Cuttlefish.

(Cuttlefish ejects a black color fluid in the surrounding water when attacked by its enemies)

B. Mimicry

Phenomena in which the harmless living organisms imitate other harmful or poisonous living organisms to fear their enemies& escape from them.

Example

Some bees look like wasps in forming stripes on their bodies to escape from their enemies which fear from wasp.



2. Symbiosis

It is a food relationship between two different living organisms, one of them benefits from the other and does not harm it (commensalism) while the other may benefit (mutualism) or is harmed (parasitism).

Types of Symbiosis

A)-Mutualism.

b) -Commensalism.

C)-Parasitism.

a. Mutualism

A food relationship in which both of the two organisms get benefit from the other and is not harmed.

Examples

Nodular bacteria& Leguminous plants (Bean).

The bacteria fix nitrogen in an inorganic form to provide the plant with it.

The bacteria benefits from the sugar made by plants in photosynthesis.



b.Commensalism

A food relationship between two living organisms in which one of them benefits from the other, while the other neither gets benefit nor is harmed.

Examples

Sponge& tiny aquatic living organisms

Tiny aquatic living organisms get shelter& food from canals& fissures of a sponge which neither benefits nor harmed them.

c. parasitism

Is a food relationship between two different kinds of living organisms: one benefit from the other known as "the parasite" while the other one is harmed known as "the host".



Types of parasitism

External parasitism	*Internal parasitism*
They live externally on the host's body feeding by sucking its blood.	They live internally inside the host's body feeding on his digested food, its tissues& cells
Examples: Lice , Bugs, Mosquitoes , Fleas , Ticks Jawless lamprey which sucks the fish blood.	Examples: Liver worm , Tape worm Ascaris worm , Bilharzia worm Flaria worm.

Harms of parasitism

The parasitism	*The disease*
1. Filaria	Causes Elephantiasis to man.
2. Mosquitoes	Causes malaria disease.
3. Fleas	Convey small pox to man.
4. Bilharzia worm	Causes Bilharzias diseases.
5. Ascaris worm	Causes Anaemia.



3. Saprophytism

Is a food relationship in which the decomposers (Saprophytes) get their food by decomposing food remains or the bodies of dead organisms.

Experiment

Activity	*Observation*	*Conclusion*
1. Splash some water drops on a slice of bread in a plastic sac and close it firmly. Leave it on dark place 2. Don't open the sac or inhale the air inside it	Green spots will be formed on the bread surface	The bread mold gets its food by decomposing bread (moist bread)

Examples

Some fungi such as:

(Mushroom – Penecillium – bread mold)





Class Work Sheet

Give reasons for:

1. Saprophytes are very important for life.

....

2. Some animals do camouflage.

....

3. Some plants feed on insects.

....

4. Drosera is an insectivorous plant.

....

5. A chameleon simulates the color of the surrounding environment.

....

6. Some bees look like wasps in forming stripes on their bodies.

....

7. The relation between a bee and flowers of plants is a mutual relationship.

....

8. Bread mold fungus is saprophytic organism.

....



Home Work Sheet

Complete the following:

1- Green plants can make their food depending on......................

2- From the food relations between living organisms are .... ,

.... , ...

3- The relation between a prey and predator is ....

4- The relation between nodular bacteria and bean plant is ....

5- From the self-defense methods against predation is .... and….

6- From the insectivore plants are .... and.......... .

7- Birds and crocodiles are considered as ....

8- Feeding on the remains of living organisms is known as ....

9- The parasitism may be .... or ....

10- From the diseases caused by parasitism are .... and ....

11- ………….is a food relationship among living organisms, where one living organism devours another one.

12- …………is a common food relationship between two different living organisms, one of them benefits from the other and does not harm it, but the other may or may not benefit from the first.

13-Plants that feed on some insects are known as …………. plants, such as …………. plant and …………plant.



Write the scientific term:-

1- The living organism changes its color to simulate the color of its surrounding environment. (…………………………………)

2-The harmless living organisms imitate other harmful or poisonous living organisms to fear their enemies and escape from them. (………….)

3- It is a food relationship in which, each organism gets benefit from the other and is not harmed. (…………………..…..)

4- It is a food relationship between two living organisms where, one of them benefits from the other, while the other neither gets benefits nor is harmed.(………………………..)

5- The temporary food relationship that ends by devouring the prey or a part of it. (…………………………)

6- The food relationship in which one organism benefits from the other and the other neither gets benefits nor is harmed. (……………………)



Unit 3 | Lesson 2

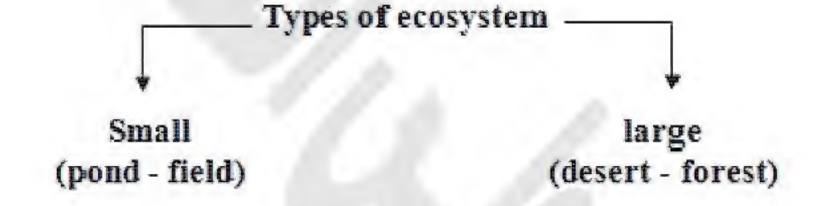
Environmental balance

Ecosystem

Is any natural area including living organisms and non-living things.

Examples

Ex: river - sea - desert - forest



The components of ecosystem

1) - Living organisms such as animals, plants, fungi & algae.

2)-Non-Living organisms such as water, air & soil.

There are different relations between living organisms in the environmental such as:

1) - The relation between the plant and the soil.

2)-The relation between plants and animals.

3)-The relation among different animals.



Environmental balance

It is the balance among the components of the Ecosystem.

N.B

The interaction among the environmental components is a continuous process that leads to keep the balance on unless a disturbance arises as a result of changing the natural things or the interference of man

Factors distrub the environmental balance

1-Natural changes

The changing of the natural conditions in the environment which leads to:

- The disappearance of some organisms or the appearance of others.
- The imbalance of the environment.

Examples The dinosaurs.

2-Man interference

Such as the environmental pollution, cutting the trees.



Factors which keep the environmental balance

1. The effect of predation on environmental balance

Predation organizes the numbers of prey's populations.

Because the predators help preys to get rid of weak or sick members& let the strong ones reproduce& increase in numbers.



What happens if there are no predators in the ecosystem?

The number of preys will increase so the food will not be enough for them& they will die.

2. The effect of saprophytes on environmental balance

Saprophytic organisms such as Bacteria& Fungi:

1. Work on decomposing the bodies of dead organisms.

2. Recycle the chemical elements found in the bodies of dead organisms such as:

Carbon, Nitrogen& Phosphorus.

To make other living organisms benefit from them.



Class Work Sheet

Give reasons for:-

1- Importance of predators.

....

2- The desert is large ecosystem.

....

3- Predation relationship plays an important role in keeping the balance of the ecosystem.

....

What will happen if :-

1- Saprophytes do not exist:

....

2. Population of preys increases:

....

3. If Rabbits are introduced into an island that has a suitable environment with much food and no natural enemies.

....



Home Work Sheet

Complete the following:

1- Disappearance of living organisms is called ....

2- Ecosystem has two kinds .... and.............. .

3- From the living organisms in ecosystem is ....

4- The interaction between living organisms is .... process to keep...........

5- From the non-living components of ecosystem are .... and ....

6- The universe is considered as a unified.......... .

7- .... is the balance between the components of the ecosystem.

8-............ is any natural area that contains living organisms and non-living things.

Write the importance of:

1- Predation:-

....

2- Environmental balance:-

....



PRACTICAL SHEET

FIRST QUESTION

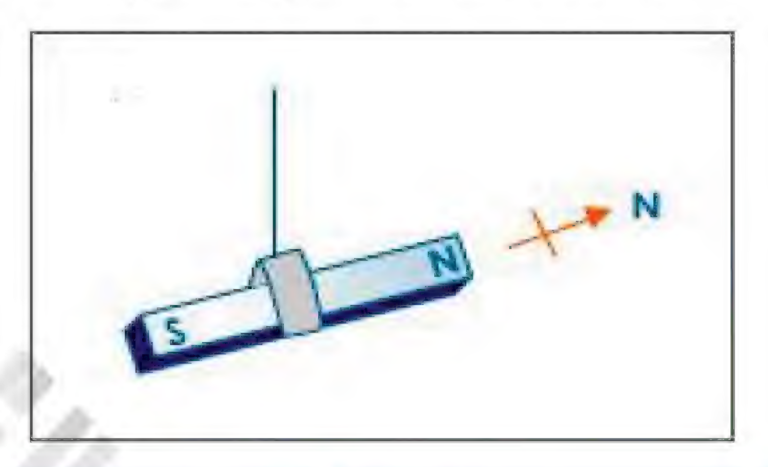
Write Observation & Conclusions of the following exp.

Exp. (1)"light refraction":



Steps	Observation	Conclusion
Look at a pencil inside a glass of water.	The pencil looks broken.	Light refracts when they transfer through different medium.

Exp. (2): "The freely suspended magnet always takes one direction":



Steps	Observation	Conclusion
Hold a magnet at its center by a fine string fixed in the stand, leave the magnet until it gets horizontally stabilized and try to move it several times.	The magnet moves again to one direction.	The freely suspended magnet takes one direction and always this direction is the North direction.

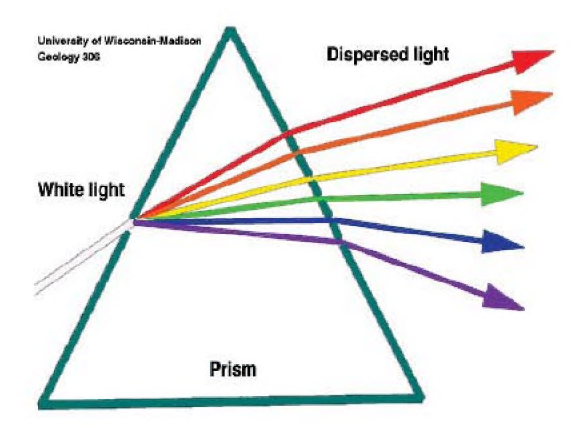


Exp. (3):"the effect of temperature on solubility":



Steps	*Observation*	*Conclusion*
4. Dissolve two equal amounts of sugar in the same amount of water. 5. Heat one of them& leave the other without heating. 6. Record the time of solubility process.	The heated solution dissolves faster.	The solubility process increases when the temperature increases.

Exp. (4):"**Spectrum Colors**":



Steps	Observation	Conclusion
Hold a prism & let the sunlight shine through it on a white paper.	The visible white light can be separated into seven colors: (Red- Orange - Yellow - Green - Blue -Indigo - Violet)	The visible spectrum is made up of seven colors Called (spectrum colors)



SECOND QUESTION

Write the name of parasite that causes the following disease

The disease	*Picture*	*The parasite*
Elephantiasis		Filaria
Malaria		Mosquitoes



Smallpox		Fleas
Bilharzias		Bilharzia
Anemia		Ascaris

